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SPIDERS OF BERMUDA

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ABSTRACT. Fifty-nine species from 22 spider families are currently known to occur on Bermuda, the majority being widely distributed, cosmopolitan and cosmopolitan species. Collections of Bermudian spiders from the Peabody Museum, the Academy of Natural Sciences of Philadelphia, and the Bermuda Department of Agriculture & Fisheries were studied. Newly collected material (July 1983, May 1988), deposited at the Natural History Museum of Bermuda, was incorporated. *Lycosa atlantica* Marx, 1889, is a junior synonym of *Trochosa ruricola* (DeGeer, 1778); *Anyphaena verrilli* Banks, 1902, and *Oonops bermudensis* Banks, 1902, are junior synonyms of *Aysha velox* (Becker, 1879) and *Heteroonops spinimanus* (Simon, 1891) respectively. A new anyphaenid species, *Anyphaena bermudensis*, is described.

INTRODUCTION

Bermuda consists of an isolated group of seven large and numerous smaller islands, situated at 32°18'N, 64°46'W in the Atlantic Ocean, about 1000 km east-southeast of Cape Hatteras, North Carolina, USA. Due to the nearby Gulf Stream, the climate is mild and frost-free. Annual rainfall averages 1400 mm and is spread evenly throughout the seasons.

The spider fauna of Bermuda is known from three previous collections by Blackwall (published 1868, nomenclature revised by Simon, 1883), Heilprin (published by Marx, 1889) and Verrill (published by Banks, 1902). In total, twenty-eight species of spiders had been recorded from Bermuda previously [additionally, Banks listed six unidentified species]. The present study adds twenty-six new species records. Together with one salticid species recorded by Griswold and four unidentified species, a total of 59 species of spiders from 22 families are known to occur on Bermuda.

An identification key to the spiders of Bermuda is not presented here. The reader is referred to Levi (1987) for family-level determinations, and

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to Roth (1985) for genus-level identification. Identification to species can only be reached by comparison of copulatory organs. For this purpose, the specialized, taxonomic literature cited under each species should be consulted.

This paper is part of an informal series on the Bermudian fauna and flora initiated by the Bermuda Department of Agriculture & Fisheries.

MATERIALS AND METHODS

Existing Collections of Bermudian Spiders

This study includes the following material:

1) the Heilprin collection, collected 1888; deposited in the Academy of Natural Sciences of Philadelphia (12 species); identified and results published by Marx, 1889 [only parts of the original Heilprin material were found in the collection].

2) The Verrill collection, collected 1901-1902; deposited in the Peabody Museum of Natural History, Yale University; identified and results published by Banks, 1902 (23 species, plus six genus records based on immature specimens).

3) Collections of the Natural History Museum of Bermuda: a) collection of the Department of Agriculture & Fisheries [collections made mainly by Dr. I. W. Hughes, Francis Monkman and Dr. D. J. Hilburn]; b) material collected in July 1983 and May 1988 by the author. Additional duplicate material was deposited in the USNM as indicated.

Blackwall's collection could not be located (Hope Entomological Collections, Oxford, Great Britain).

Text conventions

Under each species, references are made to diagnostic figures of ♀ and ♂ for identification purposes. Synonyms in brackets are names used by other authors in previous publications on Bermudian spiders. If the species was originally described in a different genus, that generic name is added (e.g., sub *Aranea*). The specimen listings are ordered according to the months (abbreviated, first three letters) in which adults were found.

Abbreviations

INSTITUTIONS:

AMNH	American Museum of Natural History, New York
ANSP	Academy of Natural Sciences of Philadelphia
BBS	Bermuda Biological Station
BG	Botanical Gardens, Paget, Bermuda
NHMB	Natural History Museum, Bermuda

- PMNH Peabody Museum of Natural History, Yale University, New Haven, Connecticut
- USNM National Museum of Natural History, Smithsonian Institution, Washington, D.C.

LOCALITY LISTINGS:

- DP Devonshire Parish
 HP Hamilton Parish
 PP Paget Parish
 PBP Pembroke Parish
 SP Smith's Parish
 SAP Sandy's Parish
 SHP Southampton Parish
 SGP St. George's Parish
 WP Warwick Parish
 w/o without locality
 — same locality as previous sample

FIGURE CITATIONS:

- co copulatory organs
 cp color pattern
 ep eye pattern
 h habitus
 sp spination

Each sample is indicated by a preceding “*”. “♀” and/or “♂” indicate adult females and/or males in the sample, “juv.” indicates juveniles, “sa” indicates subadults. New Bermuda records are indicated by “■” in front of species name.

LIST OF BERMUDIAN SPIDERS

Families and genera are listed alphabetically.

Agelenidae

Tegenaria domestica (Clerck, 1758), sub *Araneus*

[= *Tegenaria derhami* (Scopoli, 1763), see Roth, 1956]

* HP: Walsingham, May 1901, PMNH 2327 ♀. * w/o, PMNH 2326 ♀.

Distribution: All species of *Tegenaria* are considered cosmopolitan (Roth, 1968: 4). Figures: Roberts, 1985, 1: figs. 72b (co ♀♂); 3, plate 92 (h).

Anyphaenidae

■ *Anyphaena fraterna* (Banks, 1896), sub *Gayenna*

* SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♂.

Distribution and figures: North America: southern New York west to eastern Kansas, south to western Florida and eastern Texas; Platnick, 1974: 234, figs. 52, 56, 60, 77, 78 (co ♀♂, h♂).

■ *Anyphaena bermudensis* n. sp.

* SAP: Ft. Scaur, Jan 1988, NHMB ♀ (paratype IX). * SAP: Heydon Trust, sweeping, Jan 1988, USNM ♀ (holotype), USNM ♂ (paratype I). * PP: Point Finger Road, garden, at night, May 1988, AMNH ♂ (paratype II). * HP: Walsingham jungle, sweeping, Jul 1983, NHMB ♂ (paratype III), NHMB ♀ (paratypes IV, V, VI). * SP: Spittal Pond Park, Oct 1987, NHMB juvenile. * PBP: Admiralty House Park, sweeping, Oct 1987, NHMB ♀ (paratype VIII). * PP: Camden, BG, sweeping, Dec 1987, AMNH ♀ (paratype VII).

Distribution: known from Bermuda only. Figures: 1-5. See description below.

Aysha velox (Becker, 1879), sub *Anyphaena*

[= *Anyphaena verrilli* Banks, 1902] NEW SYNONYMY

* SAP: Ft. Scaur, sweeping, Jan 1988, NHMB ♂. * HP: Walsingham, May 1901, PMNH 2346 ♀ (holotype of *Anyphaena verrilli*). * SGP: Tucker's Town, sweeping, Jul 1983, NHMB juv. [*Aysha* cf. *velox*]. * PP: Berry Hill Road, in house, Oct 1987, NHMB ♀. * several juveniles from other Parishes.

Distribution and figures: North America and West Indies: North Carolina west to Arkansas, south to eastern Texas and Florida; Cuba, Haiti, Dominican Republic and Bermuda; Platnick, 1974: 259, figs. 110, 111, 122, 125 (co ♀♂).

Note: Banks (1902: 270) mentioned that he had "... seen specimens [of "*Anyphaena verrilli*"] from parts of the West Indies."

Araneidae

Cyclosa turbinata (Walckenaer, 1841), sub *Epeira*

[= *Cyclosa caudata* Hentz, 1850]

* SHP: Horseshoe Bay, sweeping, Jan 1988, NHMB ♀. * HP: Shelly Bay, Mar 1988, sweeping, NHMB ♀. * PP: Hinson's Island, in web in orchard, Apr 1969, NHMB ♀♂. * HP: Walsingham jungle, May 1901, PMNH 2329 ♀, ♂sa. * — May 1901, PMNH 2350 ♂. * SAP: [Tucker's Island Cave, now part of the U.S. Naval Annex], May 1901, PMNH 2328 juv. * — PMNH 2358 juv. * HP: Walsingham jungle, on webs, Jul 1983, NHMB ♀♂, juv. * SGP: Tucker's Town, sweeping, Jul 1983, NHMB ♀♂. * — web in mangroves, Jul 1983, NHMB juv. * HP: Flatts Village, on web, Jul 1983, NHMB ♀. * SGP: Hill Park, among rocks, Jul 1983, NHMB ♀♂. * PP: Hinson's Island, Jul 1969, NHMB ♀♂. * SP: Spittal Pond Park, sweeping, Oct 1987, NHMB ♀. * SGP: Ferry Point Park, sweeping, Oct 1987, NHMB ♂. * HP: Shelly Bay, mangrove swamp,

Nov 1987, NHMB ♀♂. * w/o, PMNH 2339 juv. * w/o, Heilprin Coll., USNM ♀.

Distribution and figures: North and Central America, West Indies; Levi, 1977: 82, figs. 20, 38-50 (co, cp, h ♀♂).

■ *Eustala anastera* (Walckenaer, 1841), sub *Epeira*

* SGP: Smith's Island, May 1988, NHMB ♀. * SGP: Tucker's Town Grove, Jul 1983, NHMB ♀. * SP: Spittal Pond Park, NHMB juv.

Distribution and figures: North America: widely distributed; Levi, 1977a: 115, figs. 205-232, 280-285, 298-302, 314-315 (co, cp, h ♀♂; variability of co).

■ *Gasteracantha cancriformis* (Linné, 1767), sub *Aranea*

* SGP: Nonsuch Island, Feb 1967, NHMB ♀. * PBP: Tulo Valley, in web, May 1969, NHMB ♂. * PP: Camden, BG, May 1988, NHMB ♂. * PP: Hinson's Island, in web in cherry hedge, Jun 1969, NHMB ♂. * SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♀. * SGP: Hill Park, among rocks, Jul 1983, NHMB juv. * HP: Flatts Village, sweeping in grass and shrubs, Jul 1983, USNM ♀♂. * SGP: Tucker's Town Grove, Jul 1983, NHMB ♀. * SAP: Sep 1969, NHMB ♂. * SAP, Shrewsbury, in web in banana patch, Sep 1969, NHMB ♂sa. * PP: Wreck Hill, Dec 1965, NHMB ♀. * PP: Point Finger Road, garden, May 1988, NHMB juv. * several juveniles from different locations throughout Bermuda.

Distribution and figures: North and South America: North Carolina west to southern California, south to northern Argentina; Levi, 1978: 441, figs. 69-84 (co, cp, h ♀♂). Note: In 1969, 1983 and 1988, *Gasteracantha cancriformis* was found to be common and occurring in various habitats on the islands (forests, mangroves, tall shrubs and grass, banana plantations, gardens and among rocks). The species was first reported in 1934 in records of the Bermuda Department of Agriculture & Fisheries.

Metepeira labyrinthea (Hentz, 1847), sub *Epeira*

* Heilprin Coll. [not in ANSP, *non vidi*].

Distribution and figures: widely distributed in eastern United States, Ontario, Canada, south to Florida; Levi, 1977b: 198, figs. 14-20 (co, cp, ep, h ♀♂).

cf. *Neoscona moreli* (Vinson, 1863)

* w/o, Blackwall Coll., det. by Blackwall as *Epeira gracilipes* Blackwall, 1862 [*non vidi*].

Note: Banks (1902: 267) suggested that Blackwall's species *Epeira gracilipes*

is a synonym of "*Araneus theisi* (Walckenaer, 1841)". Grasshoff (1986: 69) pointed out that *Neoscona theisi* occurs only in Asia (Malaysia, China, Japan and Pacific Islands). The specimen collected by Blackwall might have been a *Neoscona moreli* (Vinson, 1863). Grasshoff (1986: 56, figs. 71-78) suggested that this widespread African species had been transported by ships from West Africa to the West Indies. It is known to occur on the Antilles. In the past, *Neoscona moreli* has often been misidentified as *Neoscona theisi* (see citations in Grasshoff).

Clubionidae

■ *Clubiona reclusa* O. Pickard-Cambridge, 1863

* SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♂.

Distribution: Northern and Middle Europe, Siberia (Roewer, 1954, 2a: 499). Figures: Roberts, 1985, 1: 30b (co ♀♂).

■ *Corinna abnormis* Banks, 1930

* HP: Bailey's Bay, in house, NHMB ♂.

Distribution and figures: previously only known from the male type specimen from Puerto Rico [*non vidi*]; Petrunkevitch, 1930: 103, fig. 86 (co ♂).

■ *Corinna humilis* (Keyserling, 1887), sub *Hypsinothus*

* PP: Camden, BG, under bark of Australian Pine (*Casuarina equisetifolia* L.), May 1988, NHMB ♀; USNM ♀. * SHP: in grass, Dec 1969, NHMB ♂. * w/o, PMNH 2309 ♀, ♀sa.

Distribution and figures: widely distributed in the West Indies; Petrunkevitch, 1930: 95, figs. 78, 79 (co ♀♂; vulva not figured).

Desidae

Paratheuma insulana (Banks, 1902), sub *Eutichurus*

* w/o, May 1901, PMNH 2362 ♀ (holotype). * SGP: Whalebone Bay, in rock crevices above hightide line at shore, May 1988, NHMB ♀. * — Jul 1983, NHMB ♂.

Distribution and figures: West Indies: Cuba, Haiti; Bermuda, Florida Keys; Platnick, 1977: 200, figs. 3, 4 (co ♀); Beatty and Berry, 1988: 50, figs. 1, 4, 7, 10 (co ♂♀); Banks, 1902: fig. 3 (♀ epigynum).

Dictynidae

■ *Dictyna altamira* Gertsch & Davies, 1942

* DP: Middle Road, May 1988, USNM ♀♂. * PP: Camden, BG, May 1988, NHMB ♀. * SGP: Whalebone Bay, rocks along shore, May 1988, NHMB ♀. * SGP: Tucker's Town, sweeping shrubs, Jul

1983, NHMB ♀. * SGP: Ferry Reach, BBS, hedge, sweeping, Jul 1983, NHMB ♀. * SP: Spittal Pond Park, Nov 1987, sweeping, NHMB ♂.

Distribution and figures: North America and West Indies: widely distributed in eastern United States, Mexico and the West Indies; Chamberlin & Gertsch, 1958: 117, figs. 1-4 (co ♀♂).

Dysderidae

Dysdera crocata C. L. Koch, 1839

* PP: Camden, in rain catch bottle, BG, Mar 1966, NHMB ♀. * SP: Spittal Pond Park, May 1988, USNM ♀. * SGP: Smith's Island, May 1988, USNM ♂. * HP: Walsingham, May 1901, PMNH 2347 juv. * SGP: Tucker's Town, under stones, Jul 1983, NHMB juv. * SP: Spittal Pond Park, under rocks, Jul 1983, NHMB ♀ juv. * PP: in house, Nov 1987, NHMB ♂. * w/o, PMNH 2308 ♀, ♂, juv. * — PMNH 2376 ♂. * — PMNH 2371 ♀. * — Heilprin Coll., ANSP, several females, poor condition.

Distribution: cosmopolitan, widely distributed in Europe, Asia and the Americas (Roewer, 1942: 296). Figures: Roberts, 1985, 1: figs. 19b, d, f, h (co ♀♂, sp femur).

Filistatidae

Kukulcania hibernalis (Hentz, 1842), sub *Filistata*

[= *Filistata depressa* (C.L. Koch, 1842)]

* HP: Walsingham, May 1901, PMNH 2322 ♂ [*non vidi*]. * SAP: Tucker's Island Cave, May 1901, under stones, PMNH 2321 ♀sa. * PBP: Mount Hill, night, outside on wall, Jul 1969, NHMB ♀. * SGP: Ferry Reach, BBS, in house, Jul 1983, NHMB ♂. * w/o, PMNH 2331 ♀sa. * — PMNH 2324 ♀. * — PMNH 2332 juv. * w/o, Blackwall Coll. [*non vidi*]. * several juveniles from various localities.

Distribution: North and South America (Roewer, 1954, 2b: 1281). Figures: Comstock, 1910: fig. 1 (co ♂); Lehtinen, 1967: fig. 19 (co ♂). Note: Lehtinen (1967: 242) transferred all American species formerly assigned to *Filistata* to a new genus *Kukulcania* Lehtinen, 1967. Banks (1902: 267) synonymized *F. depressa* with *hibernalis*.

Gnaphosidae

■ *Camellina elegans* (Bryant, 1940), sub *Eilicina*

* SGP: Tucker's Town, under rocks, Jul 1983, NHMB ♀. * SGP: Whalebone Bay, under rocks, Jul 1983, NHMB juv.

Distribution and figures: North and Central America, Pacific, Africa:

Florida south to Curaçao, Hawaii, Marshall Islands, Angola; Platnick & Shadab, 1982: 6, figs. 1-4 (co ♀♂).

Callilepis sp.

* SAP: Tucker's Island Cave, May 1901, PMNH 2356 ♀sa (specimen dessicated and damaged).

Note: Revision of the genus *Callilepis* by Platnick, 1975.

Linyphiidae

This large family (150 genera, 872 species; Roth, 1988) is in need of revision. Identification is hampered and nomenclatural problems exist.

■ *Bathyphantes approximatus* (O. Pickard-Cambridge, 1871), sub *Linyphia*

* WP: Warwick Pond, May 1988, NHMB ♀. * SP: Spittal Pond Park, under rocks, May 1988, USNM ♀. * SP: Spittal Pond Park, under rocks, Jul 1983, NHMB ♀. * w/o, PMNH 2344 ♀. * — PMNH 2341 ♀sa. * — PMNH 2338 ♀sa.

Distribution: Europe, Siberia (Ivie, 1969: 54; Roewer, 1942: 596). Figures: Roberts, 1985, 3: plate 218; 1987: fig. 70a (co, cp ♀♂); Ivie, 1969: figs. 102-104. Note: Roewer (1942: 596) listed this species in the genus *Stylophora* Menge, 1899.

■ *Erigone autumnalis* Emerton, 1882

* PP: Camden, BG, May 1988, NHMB ♂.

Distribution: throughout the United States (Roth, 1988). Figures: Kaston, 1981: pl. XXVIII figs. 616-618 (co, h ♂).

■ *Erigone brevidentata* Emerton, 1909

* PP: Camden, Dept. Agriculture, on floor in lab, Jul 1970, NHMB ♂. * SP: Spittal Pond Park, sweeping, Nov 1987, USNM ♂.

Distribution: eastern United States (Roth, 1988). Figures: Kaston, 1981: pl. XXIX fig. 628, pl. XXXI figs. 662-663 (co, h ♂).

■ *Erigone* cf. *promiscua* (O. Pickard-Cambridge, 1872), sub *Neriene*

* w/o, PMNH 2335 ♀

Distribution: western Europe (Roewer, 1942: 720). Figures: Roberts, 1987: figs 43b, 45c (co ♀♂). Note: The epigynum shows resemblance to Roberts' figures of *Erigone promiscua*.

■ *Lepthyphantes leprosus* (Ohlert, 1865), sub *Linyphia*

* SGP: Tucker's Town, sweeping shrubs, Jul 1983, NHMB ♀.

Distribution: holarctic: Europe, Siberia, North America (Roewer, 1942: 549). Figures: Zorsch, 1937: figs. 7-13 (co ♀♂); Roberts, 1985, 3: plate 229a, b; 1987: fig. 77b (co ♀♂, h ♀♂).

■ *Leptyphantes obscurus* (Blackwall, 1841), sub *Linyphia*

* SP: Spittal Pond Park, forest, on web, Jul 1983, NHMB ♂.

Distribution: Europe (Roewer, 1942: 552). Figures: Roberts, 1985, 3: plate 229d; 1987: fig. 78b (co, h ♀♂).

Loxoscelidae

Loxosceles rufescens (Dufour, 1820), sub *Scytodes*

* PP: Camden, Dept. Agriculture, laboratory, May 1988, NHMB ♂.

* SGP: Ferry Reach, BBS, in house, Jul 1983, NHMB ♀. * w/o, Blackwall Coll., as *Scytodes pallida* Blackwall, 1865 [non vidi].

Distribution and figures: cosmopolitan: widespread in Europe, North America, and Africa; of European-north African origin; Roewer, 1942: 319; Gertsch & Ennik, 1983: 354, figs. 341-343, 348-351 (co ♀♂, h♀).

Lycosidae

■ *Gladicosa gulosa* (Walckenaer, 1837), sub *Lycosa*

* Parish?: Outer Island [location unknown], Coll. Verrill 1902, PMNH without number ♀.

Distribution and figures: southern Canada south to eastern Texas; Brady, 1986: 298, figs. 4, 6-9, 35, 36 (co, cp, h ♀♂).

■ *Lycosa* cf. *lenta*-group

* w/o, G. Brown Goode leg., 1876-1877, PMNH 2304 ♂sa.

Distribution and figures: spiders of the *Lycosa lenta*-group are widely distributed in south-eastern United States; Wallace, 1942, 25 figs. (co ♀♂). Note: Banks identified this specimen as *Lycosa atlantica* [= *Trochosa ruricola*]. The specimen is too large to be conspecific with *T. ruricola*. The black venter of the specimen allows the recognition of the species group.

Trochosa ruricola (DeGeer, 1778), sub *Aranea*

[= *Lycosa atlantica* Marx, 1889] NEW SYNONYMY

* PP: Hungry Bay, Apr 1901, PMNH 2351 juv. * SAP: Tucker's Island Cave, May 1901, PMNH 2357 juv. * HP: Walsingham, May 1901, PMNH 2372 ♂, ♀ damaged. * SGP: Smith's Island, May 1988, USNM ♀♂. * SP: Spittal Pond Park, May 1988, NHMB ♀. * SGP: BBS, pitfall trap, Jul 1983, NHMB ♀ with egg sac. * SGP: Great Head Park, forest litter, Jul 1983, NHMB ♂, ♀ with egg sac. * SGP: Whalebone Bay, pitfall trap, Jul 1983, NHMB ♂, juv. * Parish?: Pen Slow's Cave [location unknown], PMNH 2375 ♀. * w/o, under stones,

Heilprin Coll., ANSP 2 ♀ (syntypes *Lycosa atlantica*). * w/o, PMNH 2307 ♀, ♀sa. * — PMNH 2325 ♀ with egg sac. * — PMNH 2369 ♂, ♀sa, juv. * — PMNH 2405 ♀ adult. * w/o, USNM ♀.

Distribution: palearctic (Roewer, 1954, 2a: 299). Figures: Roberts, 1985, 1: figs. 62c, 63a (co ♀♂); Marx, 1889: fig. 4 (epigynum).

Note: The *Trochosa* specimens found on Bermuda are conspecific with *Trochosa ruricola* of Europe. Aside from the structure of the copulatory organs, a broad, low tooth on the fang of the male's chelicerae (Roewer, 1928: 130) serves as an identification character. Roewer (1954, 2a: 247) transferred *Lycosa atlantica* (without examination of type material) to a new genus *Hoggicosa* Roewer, [1954 *nom. nud.*] 1960 [1960: 772].

Oonopidae

Heteroonops spinimanus (Simon, 1891), sub *Oonops*

[= *Oonops bermudensis* Banks, 1902] NEW SYNONYMY

* w/o, PMNH 2340 ♀ (holotype).

Distribution and figures: West Indies and northern South America, Florida; Petrunkevitch, 1929: 67, figs. 53-57 (co ♀♂, ep, h, ♀ palp); Chickering, 1969: 156, figs. 28-32 (co, ep, spination ♀♂); Banks, 1902: figs. 1 a-c (ep, co, leg ♀).

■ *Orchestrina* sp.

* SP: Spittal Pond Park, May 1988, NHMB juv.

Figures: Chickering, 1969; figs. 35-39 (ep).

Oxyopidae

Oxyopes salticus Hentz, 1845

* SP: Spittal Pond Park, sweeping, Jan 1988, NHMB ♀♂. * SHP: Horseshoe Bay, sweeping, Jan 1988, NHMB ♀♂. * SP: Spittal Pond Park, sweeping, Feb 1988, NHMB ♂. * SGP: Whalebone Bay, sweeping grass, Jul 1983, NHMB ♀♂. * SGP: Ferry Point Park, sweeping grass, Jul 1983, NHMB ♀♂. * SGP: Great Head Park, sweeping grass, Jul 1983, NHMB ♀♂. * SP: Spittal Pond Park, sweeping grass, Jul 1983, NHMB ♀; USNM ♀♂. * HP: Flatts Village, sweeping grass, Jul 1983, NHMB ♀♂. * SP: Spittal Pond Park, sweeping, Oct 1987, NHMB ♂. * PP: Camden, BG, sweeping, Dec 1987, NHMB ♀. * w/o, PMNH 2345 juv.

Distribution and figures: North America: distributed throughout the United States; Brady, 1964: 482, figs. 80-86, 91-96, 104-105 (co, cp, h, ep ♀♂).

Pholcidae

■ *Pholcus phalangioides* (Fuesslin, 1775), sub *Aranea*

* SAP: Tucker's Island Cave, 3 May 1901, PMNH 2315 ♂ (det. by Banks as *Pholcus tipuloides* L. Koch, 1872).

Distribution: cosmopolitan (Roewer, 1942: 338; Emerton, 1902: 128).

Figures: Roberts, 1985, 1: figs. 21a; 3: plate 18 (co, cp, h ♀♂)

■ *Smeringopus elongatus* (Vinson, 1863), sub *Pholcus*

[= *Pholcus tipuloides* L. Koch, 1872]

* PP: Camden, in old building, Jan 1965, NHMB ♀♂. * — Jan 1966, NHMB ♀♂. * PBP: BHS-Gymnasium, on wall, Mar 1988, NHMB ♀. * SGP: Whalebone Bay, rocks close to shore, May 1988, NHMB ♀. * SGP: Ferry Reach, BBS, in house, Jul 1983, NHMB ♀♂; USNM ♀♂. * SGP: Tucker's Town, on ground, NHMB ♀sa. * SAP: Tucker's Island Cave, PMNH 2320 ♀ with egg sac. * — PMNH 2361 ♀ damaged. * w/o, Heilprin Coll., ANSP ♂sa.

Distribution: cosmopolitan (Roewer, 1942: 343). Figures: Petrunkevitch, 1929: figs. 136-138; Marx, 1889: figs. 5a-b (co, ep, h ♀).

Salticidae

■ cf. *Metaphidippus* sp.

* SP: Spittal Pond Park, sweeping, Jan 1988, NHMB ♀. * HP: Shelly Bay, sweeping, Mar 1988, NHMB ♀. * SP: Spittal Pond Park, sweeping, Nov 1987, NHMB ♀.

Note: Specimens are members of the Dendryphantinae. Specific identification is currently not possible; the group is under revision (Griswold, pers. comm.).

■ *Habronattus coecatus* (Hentz, 1846)

* SAP: Heydon Trust, sweeping, Jan 1988, NHMB ♀. * DP: Devonshire Marsh, Middle Road, May 1988, NHMB ♂. * SP: Somerset, Jul 1971, AMNH ♂ [*non vidi*]. * PP: Berry Hill Road, Nov 1987, NHMB ♀sa. * several immature specimens from various localities.

Distribution and figures: Eastern United States from New York to northern Florida, west to edge of the Great Plains, north eastern Mexico; Griswold, 1987: 97, fig. 79 (♂ leg).

Habronattus nesiotus Griswold, 1987

* w/o, Jul 1905, MCZ ♂ (holotype) [*non vidi*].

Distribution and figures: known only from male holotype from Bermuda; Griswold, 1987: 227, figs. 37, 174, 222 (cp, co ♂).

Hentzia vernalis (Peckham, 1893), sub *Anoka*

[= *Wala vernalis*]

* PP: Paget Marsh, sweeping, Jan 1988, NHMB ♂sa. * SHP: Horseshoe Bay, sweeping, Jan 1988, NHMB ♂sa. * SP: Penhurst Peak, sweeping, Jan 1988, USNM ♂. * SAP: Heydon Trust, sweeping, Jan 1988, NHMB ♀. * SAP: Gilberts Nature Preserve, May 1988, NHMB ♀. * SP: Spittal Pond Park, May 1988, NHMB ♀. * SAP: Somerset Island, railway path, sweeping shrubs, Jul 1983, USNM ♀. * SAP: Ft. Scaur, sweeping, Nov 1987, NHMB ♂. * HP: Flatts Village, Aquarium, Nov 1987, NHMB ♀. * several immature specimens from various localities.

Distribution and figures: common on Haiti, Puerto Rico, St. Vincent, Cuba; Petrunkevitch, 1930: 139, figs. 120-129 (co, cp, h ♀♂).

Menemerus bivittatus (Dufour, 1831), sub *Salticus*

[= *Menemerus melanognathus* (Lucas, 1838)]

* DP: south shore under stones, Dec 1968, NHMB ♀, ♂sa. * w/o, Heilprin Coll., ANSP ♂.

Distribution: cosmopolitan (Roewer, 1954, 2b: 1263). Figures: Petrunkevitch, 1930: figs. 165-168, Marx, 1889: figs 3a-b (co, cp ♀♂).

Plexippus paykulli (Audouin, 1827), sub *Attus*

[= *Salticus diversus* Blackwall, 1868]

* SGP: Ferry Point Park, under stones, Jul 1983, NHMB ♂♀ in nest. * SAP: Somerset Island, Black Bay, under stones, Jul 1983, NHMB ♀. * SGP: Whalebone Bay, under rocks, Jul 1983, NHMB ♀, juv. * HP: Walsingham, PMNH 2373 juv. * SAP: Tucker's Island Cave, PMNH 2374 juv. * w/o, PMNH 2310 ♀. * — PMNH 2311 ♀ with nest. * — PMNH 2312 ♂. * — PMNH 2336 juv. * — PMNH 2337 damaged, juv. * — PMNH 2359 ♀. * — PMNH 2370 ♀, ♂. * — Dec 1901, PMNH 2402 ♂. * — Heilprin Coll. (sub *Menemerus*) [not in ANSP, *non vidi*]. * — Blackwall Coll. (♂, ♂sa, type of *Salticus diversus*) [*non vidi*].

Distribution: cosmopolitan (Roewer, 1954, 2b: 1086). Figures: Petrunkevitch, 1930: figs. 140-143; Marx, 1889: figs. 2a-b (co, cp, h ♀♂; vulva not figured). Note: Banks (1902) synonymized *Salticus diversus* Blackwall, 1868, with *Plexippus paykulli*.

Scytodidae

Scytodes fusca Walckenaer, 1837

* HP: Jan 1976, NHMB ♀. * PBP, Mount Hill, in house, Apr 1966, NHMB ♀. * — Apr 1969, NHMB ♀. * SGP: Ferry Reach, BBS, in house, Jul 1983, USNM ♀.

Distribution: cosmotropical (Roewer, 1942: 323). Figures: Valerio, 1981: figs. 1, 10, 19 (co, cp ♀♂).

Scytodes longipes Lucas, 1845

* HP: under building, Jan 1970, NHMB ♀♂. * PBP: Hamilton, under ridge, Jan 1976, NHMB ♀♂. * SGP: Smith's Island, May 1988, USNM ♀. * SHP: Seymour's Pond, under tree trunk in woods, May 1988, NHMB ♀. * SAP: Tucker's Island Cave, May 1901, PMNH 2319 ♂. * PBP: Mount Hill, in house, Jul 1969, NHMB ♀ with spiderlings. * w/o PMNH 2343 juv. * w/o PMNH 2360 ♂.

Distribution: cosmopolitan (Roewer, 1942: 323). Figures: Roberts, 1985, 1: 18c; 3: plate 14; Petrunkevitch, 1929: figs. 99, 100 (co, cp ♀♂).

Sparassidae

Heteropoda venatoria (Linné, 1767), sub *Aranea*

[= *Olios antillianus* Walckenaer, 1837]

* SGP: BBS, in house, Jul 1983, NHMB ♂. * w/o, Dec 1901, PMNH 2398 ♀. * — PMNH 2317 ♀♂. * — PMNH 2342 juv. * — Heilprin Coll., ANSP juv. * — Blackwall Coll., as *Olios antillianus* [*non vidi*].

Distribution: cosmotropical (Roewer, 1954, 2a: 712). Figures: Järvi, 1914: plate 8, figs. 3-6; text-fig. 61 (co ♀); Pickard-Cambridge, 1905, II: pl VII, figs. 22a-c, 23 a-f [*non vidi*]. Note: Hilburn (pers. comm.) has frequently observed *H. venatoria* in bee hives on Bermuda.

Tetragnathidae

Leucauge, *Metellina* and *Nephila* are placed in Tetragnathidae (instead of Araneidae) after Levi & Coddington (pers. comm.).

Leucauge venusta (Walckenaer, 1841), sub *Epeira*

[= *Argyropeira hortorum* Hentz, 1847]

* HP: Walsingham woods, May 1901, PMNH 2330 ♀. * SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♂. * HP: Walsingham woods May 1901, PMNH 2348 juv. * w/o, PMNH 2364 juv. * — PMNH 2365 juv. * — PMNH 2366 juv.

Distribution and figures: North and Central America: New Hampshire west to South Dakota, south to Panama; coast of California; Levi, 1980: 28, figs. 44-59.

■ *Metellina mengei* (Blackwall, 1869), sub *Epeira*

* SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♀♂.

Distribution and figures: Europe; Levi, 1980: 38, figs. 105-107 (co ♀♂); Roberts, 1985, 1: figs. 90b,g, 91b; 3: plate 133, 134 (co, cp, h ♀♂, sp metatarsus, tarsus).

Nephila clavipes (Linné, 1767), sub *Aranea*

* SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♂ and juv.

* DP: Arboretum, Sep 1969, NHMB ♂. * w/o, PMNH 2399 ♀.

* SP: Spittal Pond Park, forest, Jul 1983, NHMB juv. * w/o, Heilprin Coll. [not in ANSP, *non vidit*].

Distribution and figures: North and South America: southeastern United States south to northern Argentina; Levi, 1980: 23, figs. 23-43 (co, cp, h ♀♂).

■ *Tetragnatha laboriosa* Hentz, 1850

* SGP: Stokes Point Nature Preserve, Jan 1988, NHMB ♀♂. * SGP:

Ferry Reach, sweeping, Jan 1988, NHMB ♂. * SP: Spittal Pond Park,

sweeping, Jan 1988, NHMB ♀♂. * HP: Shelly, Bay, sweeping, Mar

1988, NHMB ♀♂. * DP: Devonshire Marsh, sweeping, May 1988,

NHMB ♀♂. * SP: Spittal Pond Park, May 1988, NHMB ♀♂, USNM

♀♂. * SGP: Ferry Reach, BBS, meadow, sweeping, Jul 1983, NHMB

♀♂. * — hedge, sweeping, Jul 1983, NHMB ♀♂. * HP: Walsingham,

sweeping, Jul 1983, NHMB juv. * HP: Shelly Bay, mangrove swamp,

Nov 1987, NHMB ♀. * SP: Spittal Pond Park, sweeping, Nov 1987,

NHMB ♀♂. * SP: Spittal Pond Park, Nov 1987, sweeping, NHMB

♀♂. * PP: Camden, BG, Dec 1987, sweeping, NHMB ♀♂.

Distribution and figures: widespread, Alaska to Panama; Levi, 1981: 308, figs. 16-22, 120-128, pl. 6 figs. h,i.

■ *Tetragnatha versicolor* Walckenaer, 1841

* SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♀♂.

Distribution and figures: Alaska to Nicaragua and Cuba; Levi, 1981: 304, figs. 90-109, pl. 3 figs. upper left and bottom, pl. 6 figs. a-f.

Theridiidae

Achaearanea tepidariorum (C.L. Koch, 1841), sub *Theridium*

* w/o, Dec 1901, PMNH 2401 ♀. * — PMNH 2407 ♀. * Parish?:

Outer Island [location unknown], PMNH without number ♀. * w/o,

Heilprin Coll., ANSP ♀♂.

Distribution and figures: cosmopolitan; Levi, 1955: 33, figs. 69-70, 83-84; Roberts, 1985, 1: fig. 81a.

Anelosimus studiosus (Hentz, 1850), sub *Theridion*

* HP: Walsingham, May 1901, PMNH 2349 ♀. * — Jul 1983, with eggs and parts of nest, NHMB ♀.

Distribution and figures: widely distributed in North and South America; Levi, 1956: 420, figs. 21-23, 37-39 (co, cp, h ♀♂).

Argyrodes nephilae Taszanowski, 1872

* PP, Hinson's Island, in "crab spider" [= ? *Gasteracantha*] web, Apr 1969, NHMB ♂. * HP: Flatts Village, sweeping grass and shrubs, Jul 1983, NHMB ♀. * HP: Walsingham jungle, Jul 1983, NHMB ♀, ♂. * SGP: Tucker's Town, Jul 1983, NHMB ♂. * SGP: Ferry Reach, BBS, sweeping hedge, Jul 1983, NHMB ♀♂. * SGP: Hill Park, among rocks, Jul 1983, NHMB ♂. * SP Spittal Pond Park, forest, Jul 1983, ♀. * SGP: Nonsuch Island, in web in low shrubs, Jul 1969, NHMB ♀♂. * SAP: Shrewsbury, in *Nephila* web, Sep 1969, NHMB ♀♂. * HP: Shelly Bay, mangrove swamp, Nov 1987, USNM ♀♂. * w/o, Heilprin Coll. [not in ANSP, *non vidi*].

Distribution and figures: Eastern Florida, Caribbean, South America; Exline & Levi, 1962: 141, figs. 133-137 (co, h ♀♂).

■ *Argyrodes trigonum* (Hentz, 1850), sub *Theridion*

* SGP: Ferry Reach, BBS, garden, Jul 1983, NHMB ♀.

Distribution and figures: eastern United States, Ontario, Canada, south to Florida; Exline & Levi, 1962: 124, figs. 66-78 (co, h ♀♂).

■ *Coleosoma floridana* Banks, 1900

* SAP: Heydon Trust, sweeping, Jan 1988, NHMB ♀. * PP: Camden, BG, Feb 1966, USNM ♀♂; NHMB ♀♂. * SP: Spittal Pond Park, May 1988, NHMB ♀. * PP: Point Finger Road, garden, night, May 1988, NHMB ♀. * SGP: Tucker's Town, sweeping shrubs, Jul 1983, NHMB ♀. * SGP: Whalebone Bay, under rocks, Jul 83, NHMB ♀.

Distribution and figures: cosmopolitan, probably distributed by man; Levi, 1959b: 8, figs. 12-17.

Latrodectus geometricus C. L. Koch, 1841

* HP: Paynter's Vale, Apr 1901, PMNH 2352 ♂. * — PMNH 2353 ♀. * SHP: Zero, Oct 1968, NHMB ♀. * w/o, PMNH 2323 ♀.

Distribution: cosmopolitan (Roewer, 1942: 425). Figures: Levi, 1959a: figs. 8-10, 28, 37 (co, h ♀♂). Note: Levi (1983) pointed out that there are unresolved difficulties in the discrimination of *Latrodectus* species.

■ *Theridion cheimatos* Gertsch & Archer, 1942

* SGP: Ferry Reach, BBS, sweeping meadow, Jul 1983, NHMB ♀, USNM ♀.

Distribution and figures: southeastern United States; Levi, 1957: 98, figs. 335, 336, 354-357 (co, cp ♀♂).

Theridion rufipes Lucas, 1849

* PP: Camden, BG, Feb 1966, NHMB ♀♂. * PBP: Feb 1988, NHMB ♀. * PP: Camden, Dept. Agriculture, in laboratory, Mar 1988, NHMB ♀. * SAP: Tucker's Island Cave, May 1901, PMNH 2354 ♂. * PP: Berry Hill Road, in house, May 1988, NHMB ♀♂. * SGP: Ferry Reach, BBS, in house, Jul 1983, NHMB ♂♀. * PP: Berry Hill Road, in house, Oct 1987, NHMB ♂, USNM ♀♂. * PP: Berry Hill Road, in house, Nov 1987, NHMB ♀.

Distribution and figures: cosmopolitan; Levi, 1957: 58, figs. 188-193 (co ♀♂).

■ *Thymoites marxi* (Crosby, 1906), sub *Paidisca*

* SP: Spittal Pond Park, May 1988, NHMB ♀.

Distribution and figures: eastern United States to central Mexico; Levi, 1957: 111, figs. 393-395 (co ♀♂). Note: Generic placement of *marxi* in *Thymoites* is according to Levi (pers. comm.).

Thomisidae

Thomisus pallens Blackwall, 1868

* w/o, Blackwall Coll., 1 ♀sa (holotype), lost [*non vidi*].

Note: Roewer (1954, 2b: 1690) lists this species as *nomen dubium* ("nicht zu deuten").

■ *Xysticus ferox* (Hentz, 1847), sub *Thomisus*

* Parish?: Outer Island [location unknown], 1902, Verrill coll., PMNH without number ♂.

Distribution and figures: Alaska to Nova Scotia, south to Utah, Texas and Georgia; Turnbull et al., 1965: 1251, figs. 44, 47, 126, 129, 175 (co, cp ♀♂).

Uloboridae

Zosis geniculatus (Olivier, 1789), sub *Aranea*

[= *Uloborus zosis* Walckenaer, 1841]

* w/o, PMNH 2404 ♀, ♂sa, juv. * — PMNH 2406 ♂. * w/o, Heilprin Coll. [not in ANSP, *non vidi*].

Distribution and figures: cosmopolitan; Opell, 1979: 510, figs. 443-549; Marx, 1889: figs. 1a-c (co, h, cp, ep ♀♂).

DESCRIPTION OF *ANYPHAENA BERMUDENSIS* n. sp.
(Figures 1-5)

Female (7 specimens): overall color of animal pale yellow; head and chelicerae, maxillae and labium darkened to light brown; black eye pigments clearly visible. Life animal: prosoma and opisthosoma with green pattern (Fig. 4); pattern fading in alcohol.

COPULATORY ORGANS: epigynum with central atrium-like area, copulatory openings in anterior part of epigynum; copulatory ducts wide; spermathecae at posterior end of vulva.

MEASUREMENTS (in mm): holotype (USNM): total length [tl] 3.08, prosoma length [prosl] 1.32, prosoma width [pw] 0.92. Legs: I: Femur [Fe] 1.76, Patella-Tibia [PaTi] 2.6, Metatarsus-Tarsus [MeTa] 2.4, total length [tl] 6.76. II: Fe 1.12, PaTi 1.6, MeTa 1.36, tl 4.08. III: Fe 0.84, PaTi 0.96, MeTa 1.2, tl 3. IV: Fe 1.4, PaTi 1.72, MeTa 1.88, tl 5. Paratype IV: tl 3.4, prosl 1.36, pw 1. Legs: I: Fe 1.92, PaTi 2.4, MeTa 2.4, tl 6.72. II: Fe 1.36, PaTi 1.48, MeTa 1.6, tl 4.44. III: Fe 1, PaTi 1.16, MeTa 1.28, tl 3.44. IV: Fe 1.56, PaTi 1.8, MeTa 2, tl 5.36. Range (paratypes IV-IX): tl 2.9-4.2, prosl 1.28-1.6, pw 1-1.2.

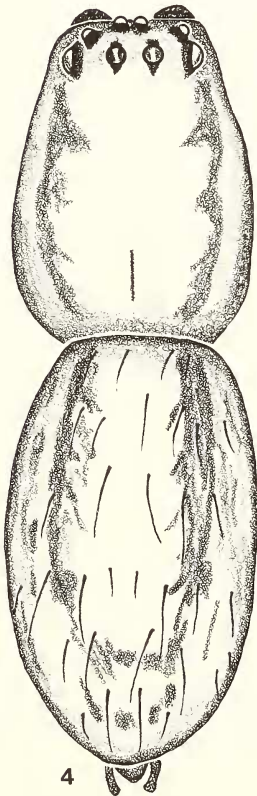
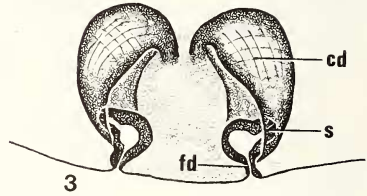
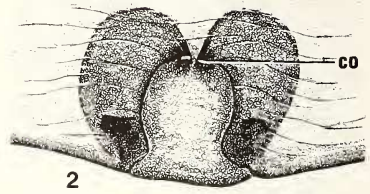
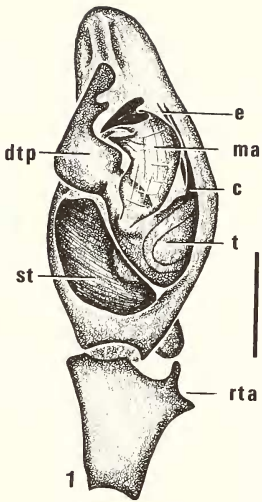
Male (3 specimens): color pattern as in female, chelicerae distinctly light brown; prolateral spine of first ventral spine pair of metatarsus III thick and thornlike, no modified spines or processes at coxae III and IV.

COPULATORY ORGANS: median apophysis and distal tegular projection elaborate and distinct, presumably species-typical; conductor long, thin, lamelliform and translucent, parallel to embolus.

MEASUREMENTS: Paratype I (USNM): tl 2.72, prosl 1.2, pw 0.92. Legs: I: Fe 1.96, PaTi 2.72, MeTa 3, tl 7.68. II: Fe 1.12, PaTi 1.64, MeTa 1.52, tl 4.28. III: Fe 0.96, PaTi 1, MeTa 1.4, tl 3.36. IV: Fe 1.48, PaTi 1.6, MeTa 1.8, tl 4.88. Paratype II: tl 3 prosl 1.3, pw 1.08. Legs: I: Fe 1.96, PaTi 2.68, MeTa 3.04, tl 7.68. II: Fe 1.28, PaTi 1.8, MeTa 1.76, tl 4.48. III: Fe 1, PaTi 1.2, MeTa 1.4, tl 3.6. IV: Fe 1.72, PaTi 1.92, MeTa 2.2, tl 5.84. Paratypes II and III: tl 2.96-3.6, prosl 1.68-1.32, pw 1.08-1.12.

Male and Female: Eyes: posterior eye row procurved, anterior eye row recurved, posterior median eyes = posterior lateral eyes > anterior lateral eyes > anterior median eyes.

CHELICERAE: ♀: three teeth at anterior margin, the innermost the largest; ♂: no teeth, but pointed hump at anterior margin. Chelicerae of ♂ distinctly larger than those of ♀.



SPINATION OF LEGS: Fe I: dorsal [d] 111, prolateral [pl] 1(long) 1(apical), retrolateral [rl] 1(apical). Fe II-IV: d 111, pl 1 (apical), rl 1(apical). Pa I-IV: d 11. Ti I,II,IV: d 11, pl 11, rl 11, ventral [v] 22. Ti III: d 11, pl 1(apical), rl 1(apical), v 2. Me I,II: pl 111, rl 111, v 22. Me III,IV: pl 111, rl 111, v 2 and brush of stiff hairs (apical). Me III ♂: pl 111, rl 111, v thorn-like spine and 1 normal spine as pair, apically with brush as ♀.

SPINATION OF PEDIPALPS: Fe: d 1 2(apical), pl 1(apical). Pa: d 11, pl 1(proximal). Ti: d 1(proximal), pl 2.

LEG FORMULA: I, IV, II, III.

NATURAL HISTORY: collected during both day and night at various localities and habitats, mostly found while sweeping. Presumably living predominantly in low vegetation.

TYPE LOCALITY: Bermuda; Sandy's Parish: Heydon Trust.

DISCUSSION: The male copulatory organs show resemblance to the species of the *Anyphaena pacifica* species-group (Platnick, 1974). It is possible that *Anyphaena bermudensis* is widely distributed in the West Indies. Most genera with numerous species of the family Anyphaenidae are currently unrevised, and it is beyond the scope of this study to review each described species of the family. Nevertheless, it seems justified to describe these specimens as a new species and make diagnostic figures available for future taxonomic work in the Anyphaenidae.

DISCUSSION

Due to its small size (54 km²) and isolation, Bermuda's terrestrial fauna and flora are depauperate, with only few endemic species. With 59 species, the total number of recorded spider species is rather small.

[In comparison, on the Madeira Islands (32°45'N, 17°00'W) 145 spider species occur (in 92 genera, 30 families; Wunderlich, 1987). The Madeira Islands, situated

Figures 1-5: *Anyphaena bermudensis* n. sp.

1. left male palp, ventral view [paratype III]
2. female epigynum [paratype IV]
3. female vulva [paratype IV]
4. female, color pattern [paratype VIII]
5. spination of leg II, lateral view [paratype II, male]

Scale bars: Figs. 1-3 = 0.2 mm; Figs. 4-5 = 0.5 mm. Abbreviations: c = conductor, cd = copulatory duct, co = copulatory opening, dtp = distal tegular projection, e = embolus, fd = fertilization duct, ma = median apophysis, rta = retrolateral tibial apophysis, s = spermatheca, st = subtegulum, t = tegulum.

at the same latitude as Bermuda, have a significantly drier climate (average of 660 mm rainfall, mainly in autumn and winter; average temperatures 17°C in winter and 21°C in summer), are larger (797 km²), with much higher elevations (Pico Ruivo 1,830 m) and the distance to the coast of Africa is only 600 km.]

The present study adds 26 new records to the 28 previously known spider species of Bermuda. Sixteen species of the Bermudian spiders are cosmopolitan or cosmopolitan; 12 species are widely distributed in North, Central and South America and in the West Indies; 15 species are of North American origin; seven species are European or palearctic. Three species of Bermudian spiders occur throughout the West Indies. Two species, *Corinna abnormis* (Clubionidae) and *Habronattus nesiotus* (Salticidae), are known from single specimens only. The high number of widely-distributed species, which are often closely related to human activities, lead to the conclusion that the majority of Bermudian spiders were introduced by man. Apparently, some of the species recorded did not establish permanent populations on Bermuda, since they were only collected once [e.g., *Tegenaria domestica*, *Neoscona moreli* and *Metepira labyrinthea*].

Nephila clavipes and *Smeringopus elongatus* may be 'native' to Bermuda, as these species were noted by early settlers (Jourdain, 1610, and Strachey, 1625, fide Kevan, 1981; Hughes, 1977). Apparently, *Argyrodes nephilae* was already present in the webs of *Nephila clavipes*. Richard Norwood [manuscript written about 1622, published in 1945; see Kevan, 1981: 10] described in the web of the "yellow Spider ... her yong ... like little balls of quick-silver," thus mistaking *Argyrodes nephilae* for the spiderlings of *Nephila*. *Gasteracantha cancriformis* was first recorded in 1934. No mygalomorph spiders have been found on Bermuda so far.

Presumably due to the constant mild climate, several spider species are active year-round. Adults of the following species were collected throughout the year: *Anyphaena bermudensis*, *Aysha velox*, *Cyclosa caudata*, *Gasteracantha cancriformis*, *Oxyopes salticus*, *Hentzia vernalis*, *Tetragnatha laboriosa*, *Argyrodes nephilae* and *Theridion rufipes*. The frost-free climate allows the occurrence of subtropical species (comprised by cosmopolitan and West Indian forms) that do not inhabit the mainland at the same latitude.

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